

# [Nuts production mix problem](https://assignbuster.com/nuts-production-mix-problem/)

Nuts Production Mix Problem Regular Deluxe Holiday Number to Make 17500 10625 5000 Total Profit Unit Profits 65 2. 00 2. 25 $61, 375 Orders
10, 000. 00
3, 000. 00
5, 000. 00
Constraints
Used
Available
Extra
Loss
Almond
0. 15
0. 20
0. 25
6, 000
6, 000
0
0. 00
Brazil
0. 25
0. 20
0. 15
7, 250
7500
250
237. 50
Filbert
0. 25
0. 20
0. 15
7, 250
7500
250
225. 00
Pecan
0. 10
0. 20
0. 25
5, 125
6000
875
1, 050. 00
Walnut
0. 25
0. 20
0. 20
7, 500
7500
0
0. 00
According to the table above and given all the resource constraints, in order to maximize profit and at the same time having more than enough nuts to satisfy the orders already placed, the company has to produce 17, 500 pounds of regular nuts, 10, 625 nuts of deluxe nuts and 5, 000 pounds of holiday nuts. This production mix would result to a profit of $24, 925 which is equal to the profit contribution as stated above ($61, 375) less the cost of almond, brazil, filbert, pecan and walnut nuts which is about $36, 450. Hence, 250 pounds of brazil, 250 pounds of filbert and 850 pounds of pecan nuts will go to the free store for a total loss of $1, 512. 50.
Moreover, given the above production mix, the cost per pound of the nuts are:
Regular
Deluxe
Holiday
Almond
0. 19
0. 25
0. 31
Brazil
0. 24
0. 19
0. 14
Filbert
0. 23
0. 18
0. 14
Pecan
0. 12
0. 24
0. 30
Walnut
0. 26
0. 21
0. 21
Assuming that the company can bought 1, 000 pounds more of almonds from a supplier who overbought for $1, 000, the additional profit contribution is $4, 958 which is much more than the additional cost of almond. The new production mixes are presented on the table in the next page.
Regular
Deluxe
Holiday
Number to Make
11667
17917
5000
Total Profit
Unit Profits
1. 65
2. 00
2. 25
$66, 333
Orders
10, 000. 00
3, 000. 00
5, 000. 00
Constraints
Used
Available
Extra
Loss
Almond
0. 15
0. 20
0. 25
6, 583
7, 000
417
446. 43
Brazil
0. 25
0. 20
0. 15
7, 250
7500
250
237. 50
Filbert
0. 25
0. 20
0. 15
7, 250
7500
250
225. 00
Pecan
0. 10
0. 20
0. 25
6, 000
6000
0
0. 00
Walnut
0. 25
0. 20
0. 20
7, 500
7500
0
0. 00
Hence, in order to increase its contribution profit, the company should exhaust all efforts to buy more of almonds since it is the first nut that gets used up.
If the ultimate objective is attain the highest contribution profit, then the company is better off not satisfying the existing orders. The company is better off with the production mix presented below.
Regular
Deluxe
Holiday
Number to Make
15000
18750
0
Total Profit
Unit Profits
1. 65
2. 00
2. 25
$62, 250
Orders
10, 000. 00
3, 000. 00
5, 000. 00
Constraints
Used
Available
Extra
Almond
0. 15
0. 20
0. 25
6, 000
6, 000
0
Brazil
0. 25
0. 20
0. 15
7, 500
7500
0
Filbert
0. 25
0. 20
0. 15
7, 500
7500
0
Pecan
0. 10
0. 20
0. 25
5, 250
6000
750
Walnut
0. 25
0. 20
0. 20
7, 500
7500
0
This production mix shows a contribution profit of $62, 250 which is $875 higher than if the company satisfies the existing orders. This is so because the Holiday mix uses a lot of almond which is a scarce resource for the production mix. Of course, the quest for profit shouldn't be the end all, be all for the organization. The company also has to be socially responsible while doing business, and simply ignoring orders for higher gains is not in alignment with corporate social responsibility (Albareda 2008, p. 430).
Works Cited
Albareda, L. 'Corporate responsibility, governance and accountability: from self-regulation to co-regulation', Corporate Governance, vol. 8, no. 4, p. 430.